

DEPARTMENT OF TRANSPORTATION**DIVISION OF ENGINEERING SERVICES**

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch

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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 1.28**WELDING INSPECTION REPORT****Resident Engineer:** Siegenthaler, Peter**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-017761**Date Inspected:** 01-Nov-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 1000**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1830**Contractor:** American Bridge/Fluor Enterprises, a JV**Location:** Job Site

CWI Name:	William Sherwood and John Pagliaro			CWI Present:	Yes	No	
Inspected CWI report:	Yes	No	N/A	Rod Oven in Use:	Yes	No	N/A
Electrode to specification:	Yes	No	N/A	Weld Procedures Followed:	Yes	No	N/A
Qualified Welders:	Yes	No	N/A	Verified Joint Fit-up:	Yes	No	N/A
Approved Drawings:	Yes	No	N/A	Approved WPS:	Yes	No	N/A
				Delayed / Cancelled:	Yes	No	N/A
Bridge No:	34-0006			Component:	Orthotropic Box Girder		

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At OBG 5E/6E LS5 longitudinal stiffener inside, QA randomly observed ABF welder Xiao Jian Wan ID #9677 perform 3G (vertical) Shielded Metal Arc Welding (SMAW) complete joint penetration (CJP) welding fill pass on the stiffener splice butt joint. The stiffener plates being welded are made of high strength plate material HPS 485W and has a thickness of 30mm. The joint has a double V joint preparation that was welded from one side and after the completion from one side, to be back gouged; Non Destructive Testing (NDT) tested using Magnetic Particle Testing (MT) and back welded to the other side. Prior welding, the fit up was inspected and accepted by ABF QC John Pagliaro. QA also verified the root gap of less than 8mm and alignment of less than 2mm which deemed acceptable to the contract requirements. The welder was noted using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The joint being welded was root welded using a ceramic backing. The splice joint was preheated and maintained to greater than 200 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blanket located at the opposite side of the plate prior/during welding. The QA Inspector noted the ABF QC John Pagliaro was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018H4R electrodes due to its limited exposure time allowed. At the end of the shift, fill pass welding was still continuing and should remain tomorrow.

At OBG 5E/6E LS2 longitudinal stiffeners inside, QA randomly observed ABF welder Hua Qiang Hwang ID

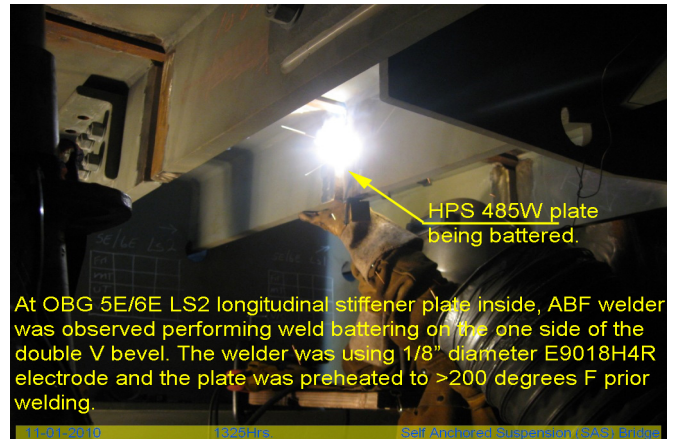
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#2930 perform vertical battering using Shielded Metal Arc Welding (SMAW) on the longitudinal stiffener LS2 splice butt joint. The joint has a double V joint preparation that has a 15mm root gap. The welder was using E9018H4R with 1/8" diameter electrode implementing Caltrans approved welding procedure specification (WPS) ABF-WPS-D1.5-1012-3. The splice joint plate was preheated and to greater than 200 degrees Fahrenheit using propane gas torch prior welding/battering. During the shift, the welder has completed battering the LS2 and has moved to LS1 and put in place the Miller Proheat 35 Induction Heating System heater blanket in preparation for the 3G (vertical) splice butt welding. The QA Inspector noted the ABF QC Inspector John Pagliero was on site monitoring the in process preheats and welding parameters. During the shift, QA noted ABF QC was closely monitoring the issuance of E9018 electrodes due to its limited exposure time allowed.

At OBG 7E/8E side plate 'E' (7855mm to 9955mm) inside, QA randomly observed ABF/JV qualified welder Sungtao, Huang ID # 3794 continuing to perform CJP groove welding fill pass on the splice butt joint. The welder was observed perform automatic welding in the 3G (vertical) position utilizing a dual shield Flux Cored Arc Welding (FCAW-G) with E71T-1M, 1/16" diameter wire electrode and implementing Caltrans approved Welding Procedure Specification (WPS) ABF-WPS-D15-3042A-1. The joint being welded has a single V-groove butt joint with backing bar. The splice joint was preheated and maintained to greater than 150 degrees Fahrenheit using Miller Proheat 35 Induction Heating System heater blankets located at the opposite side of the plate prior/during welding. During welding, ABF Quality Control (QC) William Sherwood was noted monitoring the welding parameters of the welder. At the end of the shift, fill pass welding on the splice butt joint was still continuing and should remain tomorrow.

Other activities observed during the shift include grinding of the bevel and adjacent weld metal on the OBG 8W top deck plate and beveling of ventilation access hole top deck edge and its infill plate at OBG 3E-PP2.5-E5-NE. Mike Maday who was doing the beveling was using a portable mechanical beveler as shown on photograph.



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Summary of Conversations:

At OBG 4E/5E LS2 longitudinal stiffener inside, QA Craig Hager has mentioned during turnover that ABF welder was welding underfill on the completely welded splice butt joint. Mr. Hager voiced concern whether ABF will hold the preheat to 200 degrees after welding the underfill since this splice joint was high strength material of HPS 485W and welded with E9018H4R electrode. This QA noted upon arrival at the work location that welding of the underfill was completed and that ABF was holding the preheat maintenance to more than 200 degrees. ABF QC John Pagliero also mentioned to this QC that they will hold the preheat for three hours after the welding to satisfy the contract requirements. After holding/completion of the three hours post weld preheat maintenance, ABF personnel was noted flush grinding the welded cover of the longitudinal stiffener LS1 of the same OBG splice.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo, Joselito	Quality Assurance Inspector
Reviewed By:	Levell, Bill	QA Reviewer
